

Having thus defined the invention, the following is claimed:

1. In a portable electric arc welder having a power source creating a DC voltage between two output terminals, said welding having a weight of less than 100 pounds and a rating of less than 300 amperes, a voltage feedback circuit to control the voltage between said terminals by a reference voltage signal, and welding output leads for performing a welding operation, the improvement comprising: a battery charger integrated with said welder and connected to said terminals, said battery charger having output leads connectable to a battery having an output voltage of at least about 12 volts DC, said battery charger further having a changing sequence circuit operable by an input enable signal and controlled by conditions of said battery being charged to generate a voltage and/or a current to charge said battery; and, a manual selector switching on said welder and movable between a first position connecting said terminals to said welding output leads and a second position creating said battery charger input enable signal.

2. The improvement as defined in claim 1 wherein said power source is a constant voltage source.

3. An improvement as defined in claim 2 wherein a welding gun with a weld trigger is connected to one of said welding output leads and a circuit for operating said power source when both said trigger is closed and said selector switch is in said first position.

4. An improvement as defined in claim 1 wherein a welding gun with a weld trigger is

5 connected to one of said welding output leads and a circuit for operating said power source when both said trigger is closed and said selector switch is in said first position.

5. The improvement as defined in claim 2 wherein said welder has a wire feeder operable when said selector switch is in said first position.

6. The improvement as defined in claim 1 wherein said welder has a wire feeder operable when said selector switch is in said first position.

7. A portable electric arc welder having a power source creating a DC voltage between two output terminals to drive a welding device and an integrated, internal battery charger with an input stage and an output stage connectable to a battery to be charged, and a selectable switch having a first position connecting said terminals to said welding device and a second position connecting
5 said terminals to said integrated battery charger at a selected location.

8. A portable electric arc welder as defined in claim 7 wherein said power source is a constant voltage source.

9. A portable electric arc welder as defined in claim 7 wherein said selectable switch has a third position, an integral device for actuating a starter motor, said actuating device connected to at least one of said output terminals by a connector and a circuit to close said connector when said

selector switch is in said third position to operate said starter motor of an internal combustion engine.

10. A portable welder as defined in claim 9 wherein said power source has a rating of less than 300 amperes.

11. A portable welder as defined in claim 7 wherein said power source has a rating of less than 300 amperes.

12. A portable welder as defined in claim 14 including a spark inhibitor comprising a resistor in one of said output leads with an impedance of at least about .3 meg ohms and connected in parallel with a shunt switch, a current sensor for said lead and a circuit to close said shunt switch when said current sensor senses a current below a given value, said value substantially greater than the rated current of said power source but less than twice the rated current of said power source.

13. A portable welder as defined in claim 13 including a spark inhibitor comprising a resistor in one of said output leads with an impedance of at least about .3 meg ohms and connected in parallel with a shunt switch, a current sensor for said lead and a circuit to close said shunt switch when said current sensor senses a current below a given value, said value substantially greater than the rated current of said power source but less than twice the rated current of said power source.